Vin Shin

shin.vin linkedin.com/in/vinshin623 vinshin623@gmail.com

Education

University of California, Santa Barbara June 2028
B.S. Electrical Engineering *Current GPA: 4.0/4.0*

Coursework

Courses: Physics C: Mechanics, Physics C: E&M, Calculus 2, Linear Algebra, Differential EQs

Technical Skills

Technologies: CAD (Fusion, Inventor Professional), Circuit Design (KiCAD), Version control (Git)
Tools: 3D Printing (Prusaslicer, Bambu Studio), CNC (Tormach), Laser-Cutting (UCP), Pytorch
Languages: C/C++, Python, MATLAB, Java, JavaScript/TypeScript, HTML/CSS, LaTeX

Professional Experience

Lead PCB Designer | **Nize Systems** | Pleasanton, CA Feb. 2023 - Apr. 2024

- Designed and constructed a bridge PCB connector between RFID RC522 and Arduino Nano, decreasing production times by an estimated 50% utilizing KiCAD.
- Designed scanner PCBs utilizing ESP-32 and ATmega architectures, RGB lighting, RFID & NFC modules.
- Consulted for engineering interns planning microcontroller system designs.

Engineering Intern | **Arcadia Tractor Corporation** | San Jose, CA Nov. 2022 - Jan. 2024

- Improved ball-collection performance by an estimated 20% by designing a compact ball collection hopper with Fusion.
- Developed an automatic recharging circuit independent of tractor communication, allowing full autonomy utilizing KiCAD, Arduino, and linear motor actuators.
- Prototyped ball-deflectors, reducing damage-costs subsequent tractor operation with Fusion and design iteration.
- Monitored autonomous behaviors and managed data collection of prototype tractor.

Projects

Autonomous Shopping Cart | *PLTW CTE Presentation* Feb. 2023

- Utilized brushless hub motors, hall effects, RC & PWM communications, Raspberry Pi, LiDAR, cameras, and ROS to construct a remote control shopping cart.
- Improved safety and storage capabilities (rated to move at 25 mph max, and up to 300 pounds of load).
- Showcased to 300 people and presented in a conference for technological mobility.

Project Bonsai | *Trash Collection Rover* Jun. 2024

- Designed a multipurpose rover with Raspberry Pi, Dynamixel Motors, LiDAR, and ROS capable of detecting and manipulating, storing, and clearing trash.
- Implemented map scanning and localization through SLAM, ensuring optimal traversal and collection efficiency.
- Capable of scanning and clearing rooms (100 sq ft) in 3 minutes.

Leadership Experience

Director | **Mechanicon Hacks** | **Foothill High School** Nov. 2023

- Led and managed a team of students to organize an engineering competition for grades 6-12.
- Hosted events (structure-stress under load through simulated earthquakes and multi-terrain vehicle track).
- Raised over 2k+ from various sponsors (Wolfram Alpha).